Complete Summary

TITLE

Central line-utilisation ratio (CLUR): number of centrally-inserted (CI) central line-days per patient-days in adult intensive care unit (ICU), during the 6 month time period.

SOURCE(S)

Australian Council on Healthcare Standards (ACHS). ACHS clinical indicator users' manual 2009. ULTIMO NSW: Australian Council on Healthcare Standards (ACHS); 2009 Jan. 853 p.

Measure Domain

PRIMARY MEASURE DOMAIN

Use of Services

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the Measure Validity page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to assess the number of centrally-inserted (CI) central line-days per patient-days in adult intensive care unit (ICU), during the 6 month time period.

RATIONALE

Central line-associated blood stream infections (CLABs) are responsible for 20 to 40% of healthcare-associated blood stream infections. Risks for occurrence differ amongst clinical units dependent on the type of line used and patient intrinsic factors. A significant proportion of CLAB events are preventable through adoption of best clinical practice. The occurrence of healthcare-associated blood-stream infections (BSIs) can be used as a measure of the safety of key clinical practice processes within a unit.

As absolute rates of central line-associated infections are in general quite low, it is important for units to realise that unless the line-day denominator for the surveillance period is large, the standard error of an individual rate measurement is high. Suspected infection trends within a unit should therefore be carefully examined by appropriate statistical measures such as process control charts and other quality improvement tools to evaluate significance, at time intervals also determined by statistical considerations.

Timely investigation of significantly higher than expected numbers of events or in larger units, rates of infection, may identify system issues relating to preventative factors for documentation and corrective action.

PRIMARY CLINICAL COMPONENT

Adult intensive care unit (ICU); centrally-inserted (CI) central-line utilisation ratio (CLUR)

DENOMINATOR DESCRIPTION

Total number of patient-days in adult intensive care unit (ICU), during the 6 month time period (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

NUMERATOR DESCRIPTION

Total number of centrally-inserted (CI) central line-days in adult intensive care unit (ICU), during the 6 month time period (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

<div style="text-align:center; background-color:#8080f0; color:white; font-weight:bold; padding:4px;">Evidence Supporting the Measure</div>

EVIDENCE SUPPORTING THE VALUE OF MONITORING USE OF SERVICE

- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

<div style="text-align:center; background-color:#8080f0; color:white; font-weight:bold; padding:4px;">Evidence Supporting Need for the Measure</div>

NEED FOR THE MEASURE

Monitoring and planning

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Australian Council on Healthcare Standards (ACHS). Australasian clinical indicator report 2001-2007. Determining the potential to improve quality of care: 9th edition. ULTIMO NSW: Australian Council on Healthcare Standards (ACHS); 2008. 611 p.

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Monitoring and planning

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Adults

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

Unspecified

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

Unspecified

UTILIZATION

Unspecified

COSTS

Unspecified

<div style="text-align: center; background-color: #8888ee; color: white; font-weight: bold;">Institute of Medicine National Healthcare Quality Report Categories</div>

IOM CARE NEED

Not within an IOM Care Need

IOM DOMAIN

Not within an IOM Domain

<div style="text-align: center; background-color: #8888ee; color: white; font-weight: bold;">Data Collection for the Measure</div>

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Patient-days in adult intensive care unit (ICU), during the 6 month time period

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions
Total number of patient-days in adult intensive care unit (ICU)*, during the 6 month time period

*ICU includes any general or speciality (i.e., cardio-thoracic, burns, neurosurgical or coronary care) intensive care unit. ICUs are stratified according to their designation as either adult or paediatric.

Exclusions
Unspecified

RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

DENOMINATOR (INDEX) EVENT

Institutionalization

DENOMINATOR TIME WINDOW

Time window brackets index event

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
Total number of centrally-inserted (CI) central line-days in adult intensive care unit (ICU), during the 6 month time period

Notes:

- Central lines are classified as intravascular devices with a tip ending in a major vein or artery in the abdomen or chest.
- A centrally-inserted (CI) central line is one in which the skin entry point is on the trunk of the patient.
- When calculating CI central line days, all types of CI central lines (cuffed and non-cuffed, implanted, etc.) *in situ* in a specific unit during the time period under study are included. Patients with two CI central lines in place for one day are counted as one CI central line-day.
- Central line-utilisation ratios (CLURs) are calculated for ICUs and provide an indication of the degree to which ICU patients are exposed to the risk of central line-associated blood stream infection (CLAB). It enables ICUs to determine whether their unit is comparable to other similar units in terms of CI and peripherally-inserted (PI) central line utilisation.

Exclusions
Unspecified

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Institutionalization

DATA SOURCE

Medical record

LEVEL OF DETERMINATION OF QUALITY

Does not apply to this measure

PRE-EXISTING INSTRUMENT USED

Unspecified

SCORING

Rate

INTERPRETATION OF SCORE

Undetermined

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

External comparison at a point in time
External comparison of time trends
Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

Unspecified

Identifying Information

ORIGINAL TITLE

Indicator area 2: central line-associated blood stream infections CI 2.2.

MEASURE COLLECTION

Australian Council on Healthcare Standards (ACHS) Equip Clinical Indicators

MEASURE SET NAME

Infection Control Indicators

DEVELOPER

Australian Council on Healthcare Standards

FUNDING SOURCE(S)

Funding is direct Australian Council on Healthcare Standards (ACHS) funding sourced through our membership. ACHS does not receive external funding from the government or other sources.

COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

Our terms of reference dictate the composition of the working parties that develop our indicators and include the following:

- Two Clinicians -- nominated by the relevant specialty college/association/society, one nominated to be the chair of the working party
- Private Hospital Representative -- nominated by the Australian Private Hospital Association
- Consumer Representative -- nominated by the Consumer Health Forum of Australia
- Coding Representative -- nominated by the National Centre for Clinical classification on Health
- Quality Health New Zealand, nominated by QHNZ (if applicable)
- Epidemiological/Clinical Research Representative, Director of Health Services Research Group, University of Newcastle
- Australian Council on Healthcare Standards (ACHS) Representatives -- Clinical Director, Coordinator, Administrative Assistant
- Other Expert Stakeholders, as required

FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST

None

ADAPTATION

The Australian Council on Healthcare Standards (ACHS) Infection Control Indicators are in accordance with the standard set of definitions published by the Australian Council for Safety and Quality in Health Care's, Health Care Associated Infections Advisory Committee (HCAIAC) and Surveillance Working Party.

The definitions were originally developed by the National Advisory Board of the Australian Infection Control Association based on the National Nosocomial Infections Surveillance Systems, the Nosocomial Infection National Surveillance System and from the Public Health Laboratory Service of the UK (PHLS).

In response to feedback from participating organisations and in keeping with the above definitions, the indicators published as version 3 have been modified to either improve the understanding of the indicator definitions or improve collection methodologies.

RELEASE DATE

2002 Jan

REVISION DATE

2009 Jan

MEASURE STATUS

This is the current release of the measure.

This measure updates a previous version: Australian Council on Healthcare Standards (ACHS). ACHS clinical indicator users' manual 2008. ULTIMO NSW: Australian Council on Healthcare Standards (ACHS); 2007 Dec. 776 p.

SOURCE(S)

Australian Council on Healthcare Standards (ACHS). ACHS clinical indicator users' manual 2009. ULTIMO NSW: Australian Council on Healthcare Standards (ACHS); 2009 Jan. 853 p.

MEASURE AVAILABILITY

The individual measure, "Indicator Area 2: Central Line-Associated Blood Stream Infections CI 2.2," is published in "ACHS Clinical Indicator Users' Manual 2009."

For more information contact, the Australian Council on Healthcare Standards (ACHS), 5 Macarthur Street, ULTIMO NSW 2007; Phone: (02) 9281 9955; Fax: (02) 9211 9633; E-mail: pos@achs.org.au; Web site: www.achs.org.au.

COMPANION DOCUMENTS

The following is available:

- Australian Council on Healthcare Standards (ACHS). Australasian clinical indicator report 2001-2007. Determining the potential to improve quality of care: 9th edition. ULTIMO NSW: Australian Council on Healthcare Standards (ACHS); 2008. 611 p. This document is available in Portable Document Format (PDF) from the Australian Council on Healthcare Standards (ACHS) Web site.

NQMC STATUS

This NQMC summary was completed by ECRI Institute on August 11, 2008. This NQMC summary was updated by ECRI Institute on September 11, 2009.

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